

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,113	08/01/2001	Colin V. Cryan	OIC-PT005	7077

3624 7590 04/03/2003

VOLPE AND KOENIG, P.C.
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

RECEIVED
JUL 08 2005

APR 07 2003

VOLPE & KOENIG, P.C.

EXAMINER

LIN, TINA M

ART UNIT PAPER NUMBER

2874

DATE MAILED: 04/03/2003

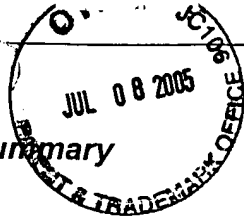
Please find below and/or attached an Office communication concerning this application or proceeding.

DOCKETED FOR

7/3/03

Response

Office Action Summary



Application No.

09/921,113

Applicant(s)

CRYAN ET AL. *U*

Examiner

Tina M Lin

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

RECEIVED

AM/PM

APR 07 2003

VOLPE & KOENIG, P.C.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 10 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,243,522 B1 to Allan et al. Allan et al. discloses an optical waveguide fiber with a graded index core body (Column 3 Lines 42-46) where a perform is drawn, heated and fused (Column 3 Lines 12-20) with a plurality of low index rods and at least one high index rod (Figure 3A, Figure 8, Column 3 Lines 23-24 58-60, and Column 4 Lines 4-6) arranged in a predetermined pattern (Column 4 Line 34). Allan et al. also discloses the rods being fused together and in direct contact with each other. Lastly, Allan et al. teaches the index rods to be made of glass. (Column 2 Line 47) But Allan et al. fails to disclose the entire fiber to be a graded index fiber, Allan et al. only discloses a core being a graded index. However, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have drawn, heated and fused an entire fiber to be a graded index fiber by the same process instead of just the core, depending on the requirement of the application of the fiber.

Claims 2-4 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,243,522 B1 to Allan et al. as applied to claims 1 and 10 respectively above. In reference to Claims 2-4 and 11-13, Allan et al. discloses a fiber with a graded-index profile and

Art Unit: 2874

with a plurality of low index rods and at least one high index rod (Figure 3A, Figure 8, Column3 Lines 23-24 58-60, and Column4 Lines 4-6). But Allan et al. fails to disclose an arrangement of intermediate index rods having at least two different indices. Allan also fails to disclose an arrangement of index rods to provide a desired refractive index distribution. However, Allan et al. does disclose a structure with a graded index profile. (Column 4 Lines 27-30) It is well known in the art that a graded index fiber will have multiple indices of refractions, since the definition of a graded index fiber is a fiber having many indices (i.e. a gradation from fiber center to periphery). Therefore, it would have been obvious at the time the invention was made to a person with ordinary skill in the art to have placed additional rods in a predetermined arrangement with different indices in the perform to obtain the desired refractive index of a optical fiber.

Claims 7-9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,243,522 B1 to Allan et al. as applied to claim 1 above. Allan et al. discloses an optical waveguide fiber with core having a graded index profile. (Column 4 Line29) Allan further discloses a drawn, heated and fused preform (Column 3 Lines 12-20) with a plurality of low index rods and at least one high index rod (Figure 3A, Figure 8, Column3 Lines 23-24 58-60, and Column4 Lines 4-6) arranged in a predetermined pattern (Column 4 Line 34). Allan also discloses an array of graded index fibers in Figure 8. But Allan et al. fails to disclose a graded index fiber with a center located at a specified position, the fused fibers located in a predetermined pitch and an arrangement of fused fibers into an array. However, Allan et al. does disclose array of graded index fibers in Figure 8 show that the fused fibers are also capable of being placed in an array. Therefore, it would have been obvious at the time the invention to a

Art Unit: 2874

person with ordinary skill in the art to have a graded index fiber placed in a specific location and to have the fused fibers arranged in an array located in a predetermined pitch.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,243,522 B1 to Allan et al. as applied to claim 1 above, and further in view of U.S. Patent 6,091,872 to Katoot. Allan et al. discloses an optical waveguide fiber with a graded index profile. (Column4 Line29) Allan further discloses a drawn, heated and fused preform (Column 3 Lines 12-20) with a plurality of low index rods and at least one high index rod (Figure 3A, Figure 8, Column3 Lines 23-24 58-60, and Column4 Lines 4-6) arranged in a predetermined pattern (Column 4 Line 34). Lastly, Allan et al. teaches the index rods to be made of glass. (Column 2 Line 47) But Allan et al. fails to disclose the low and high index rods to be formed of a polymer. However, Katoot et al. discloses an optical bundle drawn and fused (Column 9 Lines 13-15). Katoot further discloses the optical fibers to be made of glass or polymers. (Column 10 Lines 5-6) Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have formed low and high index rods with a polymer material in place of glass.

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection. The Examiner agrees with applicant that U.S. Patent 6,243,522 to Allan et al. does not specifically teach all the limitations of the claimed invention. However, using the Allan et al. reference, an obviousness rejection was made with the reasons stated in the above rejections.


Art Unit: 2874

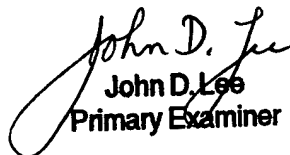
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References A through E discuss similar methods of creating fiber bundling and fusing then together.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M Lin whose telephone number is (703) 305-1959. The examiner can normally be reached on Monday-Friday 8:30-5:30.

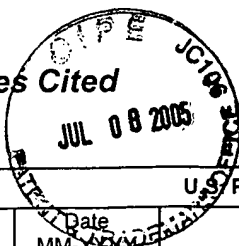
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TML 
March 25, 2003


John D. Lee
Primary Examiner

Notice of References Cited



Application/Control

09/921,113

Applicant(s)/Patent Under
Reexamination
CRYAN ET AL.

Examiner

Tina M Lin

[Signature]

Art Unit

2874

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,427,491 b1	08-2002	Burke et al.	65/403
	B	US-5,712,941	01-1998	Imoto et al.	385/126
	C	US-5,729,645	03-1998	Garito et al.	385/127
	D	US-2002/0044754 a1	04-2002	Yamashita et al.	385/124
	E	US-6,529,665 b1	03-2003	Yamashita et al.	385/124
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

RECEIVED

APR 07 2003

VOLPE & KENIG, P.C.

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.